Ephemeris for Berlin Midnight

1887	R.A. h m s	Decl. ° ′	log Δ	log *r*	Brightness
Feb. 12	20 4 1	+ 37 25·2	0·33827	0·26127	0·83
16	20 16 44	39 50·3	0·34157	0·26929	
20	20 29 54	42 12·3	0·34566	0·27733	0·74
24	20 43 32	44 30·2	0·35051	0·28538	
28	20 57 38	+ 46 43·4	0·35608	0·29341	0·66

The brightness on January 24 is taken as unity.

THE ROUSDON OBSERVATORY.—We have received Mr. Peek's report on the astronomical work done at the Rousdon Observatory, Lyme Regis, in 1886. During the year, 146 nights were available for observation, the most cloudy month having been February, and the clearest December. Selected lists of long-period variable stars are under systematic observation with the 6·4-inch equatorial. The following comets have also been observed: 1885 *d* and *e*, 1886 *a*, *b*, *c*, *e*, and *f*. The great nebula in Andromeda is under regular observation. We would suggest to Mr. Peek the propriety of publishing the observations of cometary positions at as early a date as is possible; their value is much increased by speedy publication.

MINOR PLANET No. 264.—This asteroid has been named Libussa by Prof. Peters, of Clinton, U.S.A., the discoverer.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 *FEBRUARY* 13-19

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on February 13

Sun rises, 7h. 20m.; souths, 12h. 14m. 25·5s.; sets, 17h. 8m.; decl. on meridian, 13° 21′ S.: Sidereal Time at Sunset, 2h. 42m.

Moon (at Last Quarter February 15) rises, 22h. 48m.*; souths, 4h. 27m.; sets, 9h. 55m.; decl. on meridian, 7° 5′ S.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian ° ′
Mercury ...	7 43 ...	12 38 ..	17 33 ...	13 7 S.
Venus	8 1 ...	13 22 ...	18 43 ...	8 28 S.
Mars	7 56 ...	13 16 ...	18 36 ...	8 33 S.
Jupiter... ...	23 43* ...	4 44 ...	9 45 ...	12 11 S.
Saturn... ...	13 29 ...	21 37 ...	5 45* ...	22 19 N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Occultations of Stars by the Moon (visible at Greenwich)

Feb.	Star	Mag.	Disap. h. m.	Reap. h. m.	Corresponding angles from vertex to right for inverted image ° °
13 ...	94 Virginis ...	... 6 ...	5 26 ...	6 22 ...	38 305
14 ...	ξ′ Libræ ...	... 6 ...	1 4 ...	2 6 ...	52 202

Feb. h.
13 ... 12 ... Jupiter in conjunction with and 3° 43′ south of the Moon.

Variable Stars

Star	R.A. h. m.	Decl. ° ′		h. m.	
U Cephei	0 52·3	... 81 16 N.	... Feb. 15,	20 58	*m*
S Piscium	1 11·7	... 8 20 N.	... ,, 18,		*M*
R Arietis	2 9·7	... 24 32 N.	... ,, 15,		*M*
Algol	3 0·8	... 40 31 N.	... ,, 13,	18 50	*m*
ζ Geminorum ...	6 57·4	... 20 44 N.	... ,, 13,	4 0	*M*
R Boötis	14 32·2	... 27 14 N.	... ,, 17,		*M*
δ Libræ	14 54·9	... 8 4 S.	... ,, 17,	0 57	*m*
U Coronæ	15 13·6	... 32 4 N.	... ,, 14,	1 37	*m*
V Coronæ	15 45·5	... 39 55 N.	... ,, 14,		*M*
U Ophiuchi... ...	17 10·8	... 1 20 N.	... ,, 15,	2 41	*m*
		and at intervals of		20 8	
T Herculis	18 4·8	... 31 0 N.	... Feb. 18,		*M*
β Lyræ...	18 45·9	... 33 14 N.	... ,, 20,	22 0	*M*
R Lyræ	18 51·9	... 43 48 N.	... ,, 13,		*m*
δ Cephei	22 25·0	... 57 50 N.	... ,, 13,	4 0	*m*
R Cassiopeiæ ...	23 52·7	... 50 46 N.	... ,, 15,		*M*

M signifies maximum; *m* minimum.

Meteor-Showers

On February 17, a radiant near *v* Herculis, R.A. 238°, Decl. 48° N. On February 20, from Coma Berenices, R.A. 180°, Decl. 33° N.; and another from near ρ Herculis, R.A. 263°, Decl. 36° N. Other radiants of the week:—Near λ Draconis, R.A. 165°, Decl. 73° N., and near β Ophiuchi, R.A. 260°, Decl. 0°.

GEOGRAPHICAL NOTES

IN a private letter from Mr. H. M. Stanley, published yesterday, he says that when he reached Cairo he found that all the political authorities and experts there were opposed to the idea of his taking the Congo route. They thought that as the Expedition was to be armed with several hundred Remingtons and a machine-gun of the latest invention it was to be an offensive force, conducted after strict military rules, and that Mr. Stanley would therefore meet with no insuperable difficulties either by the Karagwé or by the Masai route. On this point he undeceived them, and he also showed that if serious fighting were necessary his men would be wholly unable to meet great masses of native warriors. Besides, the probable result of a struggle with Uganda would be that Mr. Mackay, the missionary, and the French Bishop and Père, now in Mwanga's power, would be murdered. The total length of each land journey is given by Mr. Stanley as follows:—Congo route: Mataddi to Stanley Pool, 235 English miles; Stanley Falls to Lake Albert, 360 English miles—total 595 English miles. Karagwé route: Zanzibar to Lake Albert, 950 English miles. Masai route: *viâ* Taveta, Kenia, and Turkan, 925 English miles. Mr. Stanley also calculates the length of the various routes by days, assuming that only an average of six miles could be made daily. Congo route: land journeys, 99 days; Zanzibar to Congo, by steamer, 20 days; Lower Congo, by steamer, 3 days; Upper Congo, by steamer, 35 days. Total, 157 days. Karagwé route: land journey, 156 days. Masai route: land journey, 154 days.

THE most important contribution to the new number of the *Bulletin* of the Paris Geographical Society is the series of maps of the River Ogové in West Africa, by Lieut. Mizon. These maps, which are on the scale of about 1 kilometre to an inch, and refer to the whole course of the river as surveyed by Lieut. Mizon, are executed with much care. In the brief text which accompanies the maps, the author describes his method of observation, and gives the positions of some of the more important points. M. Jamkowski contributes an article on Fernando Po, in which he gives some welcome information on the curious people known as Bubis, who inhabit the mountainous districts of the island. Other papers in this number are on the "Ksour" of Bouda (West Sahara), by M. Chatelier; two papers on Tonquin, by Lieut. Gouin; and a paper on the expedition of General de Bussy in the Deccan in the eighteenth century.

IN the Bulletin of the American Geographical Society, No. 2, 1886, Commander H. C. Taylor, U.S.N., describes the various projects which from time to time have been advanced for the construction of a canal across Nicaragua, and attempts to show that this is the most favourable route for a canal between the Atlantic and Pacific. Dr. G. E. Ellis gives an interesting *résumé* of the history of the Hudson's Bay Company, 1670-1870.

LAKE TAHOE, long regarded as the deepest fresh-water lake in the United States, must now take the second place. Capt. C. E. Dutton, of the U.S. Geological Survey, made, in July 1886, a series of soundings at Crater Lake, Oregon, with unexpected results. The mountain wall that surrounds the lake is 900 feet high; the average depth is 1500 feet, and the maximum 1996.

To the January number of *Petermann's Mitteilungen*, Dr. Theobald Fischer contributes the first part of a study of the coasts of North Africa, in which he attempts to account with precision, on geological and meteorological bases, as well as by the action of the sea, for the various features of the North African coast. The present instalment deals mainly with the Algerian and Tunisian coast, and the investigation forms part of a detailed study which Dr. Fischer is making of the whole Mediterranean coasts. The paper is accompanied by maps, while another map illustrates the distribution of languages in Germany and Austria, the accompanying text being by Prof. F. Held. Dr. Possewitz contributes a paper on the laterite outcrops in the Island of Banka.

THE new number of *Appalachia* contains, among other things, a series of useful data, by Prof. E. C. Pickering, on "The Heights of the White Mountains," and a valuable paper by Prof. W. Morris Davis, on "Mountain Meteorology."

IT may interest both geographers and ethnologists to know that in the current numbers of *Les Missions Catholiques* the Rev. Jules Brunetti describes his recent journey up the River Maroni, in French Guiana, giving many details concerning the Negro population which is settled on its banks.

THE Austro-Hungarian Expedition for the investigation of Central Africa, which was organised last year by Count Samuel Teleki, and reached Zanzibar last June, has left for the interior.

A GERMAN Expedition to Brazil sailed from Bremerhafen on January 25. The gentlemen are: Dr. Karl von den Steinen and his cousin Wilhelm, Dr. P. Vogel (Uelfeldt), and Dr. Ehrenreich (Berlin). Both Dr. K. von den Steinen and Dr. Vogel took part in the German Polar Expedition to South Georgia, and the former gentleman and Dr. Clauss were with the celebrated Expedition for the investigation of the Xingu River in Central Brazil, while Dr. Ehrenreich was on a journey in the Amazon district.

THE new number of the *Mittheilungen* of the Vienna Geographical Society contains Dr. Lenz's map of the Congo between Stanley Falls and Kasonge, to the journey up which we referred in a recent number of NATURE. The map gives much information as to the character of the country along the banks of the river, and the people who inhabit them. As it is only six months since Dr. Lenz arrived at Kasonge, one cannot but remark the rapidity with which the journey between the coast and the centre of Africa can now be made. As a matter of fact, the London Missionary Society has a monthly mail between Zanzibar and Lake Tanganyika, and letters from their missionaries on the west shore of that lake reach London in three months.

THE same number contains the conclusion of Herr Baumann's very valuable description of the country and people on the Middle and Lower Congo; a paper on the high lakes of the Eastern Alps, by Dr. August Böhm; and a collection of recent statistics on the population of Bosnia and Herzegovina.

HERR P. LANGHAUS has been endeavouring to form an estimate of the native population in the Cameroons territory recently acquired by Germany. He confines himself to the coast region between the Rio del Rey and the Rio Campo, and gives 480,500 as the population on 26,000 square kilometres, or only 18 per square kilometre. The people mostly belong to the north-west branch of the Bantu stock, and Herr Langhaus gives some useful details as to their distribution and subdivision in the *Deutsche Rundschau* for January.

A NEW exploration of the districts on the Upper Meikong, inhabited by the Laos tribes subject to Siam, has attracted considerable attention in Paris. Towards the end of 1885, the Siamese Government found it necessary to undertake an expedition against these tribes (the principal of them being the Ho). An Italian officer, Capt. Pinson, who was a military instructor in the Siamese service, accompanied the expedition, which ultimately arrived at Muen-Son, fourteen days' march to the north-east of Luang-Prabang, in the centre of a region wholly unknown to Europeans, for these Hos had prevented Dr. Neis from completing his famous exploration of the whole of the Laos States. The expedition, owing to frontier complications with Tonquin, was not a success, and now M. Pinson has determined to explore the country for himself, partly with the object of discovering commercial routes along the Meikong into Yunnan and into Tonquin, both starting from Luang-Prabang, and also for geographical purposes. He has arrived in Paris to lay the project before the President of the Council and the various mercantile bodies. To the former he has presented a memorial asking to be despatched on the mission by the French Government. In this document he describes briefly the divisions of the Siamese Laos, the nature of the soil, the commercial situation of Great Britain in Burmah in regard to the Laos States, the alternative trade routes for Upper Laos—which he describes as by the Meinam to Bangkok (which appears the natural route), by the Ho country into Tonquin, or by the Meikong—and other details. He expresses the determination to return without delay to Luang-Prabang, and, if aided by the French Government, (1) to penetrate into Yunnan in order to study the peoples on the route and their commercial wants, and (2) to explore and study in like manner the two routes from the same town into Tonquin and Annam. The projected exploration, it will be observed, is mainly through unknown territory, Dr. Neis not having been able to penetrate a large part of this region.

IN the last number of *La Gazette Géographique* M. Kaltbrunner publishes an interesting article entitled "L'Indicateur Géographique." He first gives statistics of the various Societies for geography and the allied sciences in the world. According to continents, the number of these is as follows:—Europe 91, Africa 5, America 9, Asia 9, Australia 2, giving a total of 115. France heads the list with 28, then comes Germany with 23, then Italy with 8, Switzerland with 7, Austria with 6, and Great Britain with 4. The total number of periodicals treating of geography as a principal or accessory subject is 263, of which 214 are published in Europe, 14 in Africa, 19 in America, 15 in Asia, and 1 in Australia. France again heads the list with 79, Germany has 42, Great Britain 18, Italy 13, Austria and the United States 11 each. Many other interesting details respecting membership, amount of subscriptions, of Government assistance, &c., are given. In Great Britain, Germany, and France the average subscriptions per member are 70, 35, and 15 francs respectively. The writer complains that, notwithstanding the great number of French Societies and publications, no one publication similar to *Petermann* in Germany and the Proceedings of the Royal Geographical Society in England exists. He proposes, therefore, that a geographical indicator should be published containing the title, place of publication, summary of contents, price, and, where desirable, a critical review of all the geographical journals, as well as of new books, maps, &c. The editor of *La Gazette Géographique* promises to carry out the idea as far as possible by giving these details respecting such of the publications as have reached his hands since the beginning of the New Year.

DR. VON KLÖDEN recently published a list of 374 rivers, with their lengths, and other data, in which he gave the Nile as the longest river, with a length of 6470 kilometres, the Missouri-Mississippi coming second with 5882 kilometres. General von Tillo revises these estimates, and from more exact measurements concludes that the Missouri-Mississippi is the longest river in the world, with 6750 kilometres, the Nile coming next, with 6470 kilometres as in Von Klöden's list. Other rivers given both by Von Klöden and Tillo with the same measurements are the Ta-Kiang, 5083 kilometres; the Amazons, 4929; the Yenisei-Selenga, 4750; the Amur, 4700; the Congo, 4640; and the Mackenzie, 4615. In connection with this subject *Petermann's Mitteilungen* states that a new curvimeter is being practically tested in Perthes's geographical establishment; if the results are satisfactory it will be of great service to those who have much to do with maps.

THE Geographical Society of Mexico is about to resume the publication of its proceedings, which has been interrupted since 1882.

Cosmos announces the forthcoming publication of an important work on the geography of the interior of Madagascar, by a French Jesuit, Père Roblet, who has explored the greater part of the island. It will be accompanied by various topographical maps, especially of the provinces of Imerina and Betsileo.

AT a recent meeting of the Geographical Society of Paris, a note was read from M. Cervera, who is charged by the Madrid Geographical Society with a journey in Eastern Africa, on his itinerary. M. Raffray, the Consul of France at Zanzibar, sent a report on the results of Dr. Junker's last journey. M. Chaffanjon, writing from San Fernando, announced his approaching departure for the exploration of the Orinoco; and Dr. Chervin read an interesting paper on the increase of the populations of France and the principal States of Europe during the present century. In France the urban population was only 24 per cent. of the total in 1843, while now it is 35 per cent. The writer referred to the very slow increase of the population in France, although the average mortality is less than in other European countries. In some of the departments the population is even less now than it was in 1801. He thought colonial extension was one of the most efficacious remedies for a state of things which threatened to place France in a position of numerical inferiority towards other States. New colonies, he says, open new fields to future generations. The process suggested, however, appears like that of putting the cart before the horse.